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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,585	03/29/2005	Atakan Peker	51294/RAG/L471	9100
23363	7590	08/02/2006	EXAMINER	
CHRISTIE, PARKER & HALE, LLP			LIN, KUANG Y	
PO BOX 7068			ART UNIT	
PASADENA, CA 91109-7068			PAPER NUMBER	

1725

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/529,585

Applicant(s)

PEKER ET AL.

Examiner

Kuang Y. Lin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5,6,8-19,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,6,8-19,21 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/22/06 & 7/19/06.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(f) he did not himself invent the subject matter sought to be patented.

(g)(1) during the course of an interference conducted under section 135 or section 291, another inventor involved therein establishes, to the extent permitted in section 104, that before such person's invention thereof the invention was made by such other inventor and not abandoned, suppressed, or concealed, or (2) before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it. In determining priority of invention under this subsection, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 19 is rejected under 35 U.S.C. 102(a)/(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over either JP 2002-45,960 or US 6,491,592 to Cackett et al.

The claimed product appears to be the same or similar to that of prior art though the prior art process does not involve a quenching step. See MPEP 2113.

5. Claims 1, 3, 5, 6, 8-18, 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over either JP 2002-45,960 or US 6,491,592 to Cackett et al.

The prior art references substantially show the invention as claimed except that they do not involve a quenching step. However, it would have been obvious to quench the solidifying casting if a fast cooling is needed depending on the particular amorphous alloy system is to be cast. With respect claims 3, 6, 8, 10, 11, 13-16 and 21-22, it would have obvious to obtain the optimal process parameters, depending on the particular amorphous alloy system to be cast, through routine experimentation.

6. Claims 1, 3, 5, 6, 8-19, 21, 22 rejected under 35 U.S.C. 103(a) in virtue of 35 U.S.C. 102(e)/(f)/(g) as being unpatentable over Peker et al. (either US 6,771,490, 6,843,496 or 6,887,586).

Either of the prior art references substantially shows the invention as claimed except that they do not involve a quenching step. However, it would have been obvious to quench the solidifying casting if a fast cooling is needed depending on

the particular amorphous alloy system is to be cast. With respect claims 3, 6, 8, 10, 11, 13-16 and 21-22, it would have obvious to obtain the optimal process parameters, depending on the particular amorphous alloy system to be cast, through routine experimentation.

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1, 3, 5, 6, 8-19, 21, 22 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-77 of U.S. Patent No. 6,771,490 or claims 1-45 of U.S. patent No. 6,843,496 or claims 1-16 of U.S. 6,887,586. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed disclosure of the patents substantially show the invention as claimed except the quenching step and the specific process parameters. However, it would have been obvious to quench the solidifying casting if a

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fast cooling is needed depending on the particular amorphous alloy system is to be cast. With respect claims 3, 6, 8, 10, 11, 13-16 and 21-22, it would have obvious to obtain the optimal process parameters, depending on the particular amorphous alloy system to be cast, through routine experimentation.

9. Applicant's arguments filed July 19, 2006 have been fully considered but they are not persuasive.

a. In pages 6 and 7 of the remarks applicant stated that neither JP '960 nor Cackett et al. discloses the defining ratio as claimed. However, JP '960 discloses to cast a ring. Normally, ratio of the outer diameter to the thickness of a ring will be about 10. Also, in col. 5, line 32+ of Cackett et al. they discloses that the thickness (the smallest dimension) of the striking plate is in the range of 0.06 to 0.011 inch. In col. 11, line 25+, the width (largest dimension) is 78 mm (equal to about 3 inches). Thus, the defining ratio (largest dimension/smallest dimension) is in the range of 50 to 300. Therefore, the prior art references teach the defining ration as claimed.

b. In page 7, last paragraph of the remarks applicant stated that Cackett et al. do not teach to cast amorphous. However, in col. 8, lines 9-11, Cackett et al. do disclose that the face member may be composed of steels, **amorphous metals**, vitrous metals ----- . Thus, Cackett et al. do teach the claimed feature.

c. In page 8 of the remarks applicant stated that JP '960 teaches to cool the investment mold to a temperature below the crystallization temperature while the investment mold of the instant application is heated during the casting process.

However, the investment mold of JP '960 must have been heated above the crystallization temperature prior to cool the same to a temperature below the crystallization temperature. There is no need to cool the mold below the crystallization temperature if the mold had not been heated above the crystallization temperature.

d. In page 9 of the remarks applicant stated that the prior art references do not show the claimed process parameters. However, it is a common knowledge that each amorphous alloy system has its own intrinsic physical parameters, such as crystallization temperature, glass transition temperature, critical cooling rate, enthalpy of crystallization, onset temperature of super-cooled liquid region, super cooled liquid range, etc. These intrinsic physical parameters affects the amorphous structure forming capability of a particular amorphous alloy in a casting process with specific casting parameters. For casting in a low quenching rate, a preferred characteristic of the bulk solidifying amorphous alloy is the one with the enhanced stability against crystallization at the temperature above the glass transition temperature, but at temperature substantially below the melting temperature. Thus, it would have been obvious to selective an amorphous alloy having a high super cooled liquid range for casting in the investment casting process which has a low quenching rate. Also, it would have been obvious to obtain the specific process parameters through routine experimentation.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

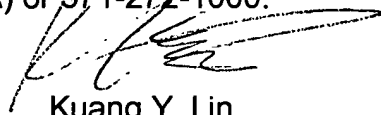
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuang Y. Lin whose telephone number is 571-272-1179. The examiner can normally be reached on Monday-Friday, 10:00-6:30,.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Kuang Y. Lin
Primary Examiner
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7-31-06